

## **BRADLEY FIGHTING VEHICLE SYSTEM-A3 (BFVS-A3)**



The M2A3 and M3A3 Bradley Fighting Vehicle System (BFVS) are improved versions of the M2A2 and M3A2 BFVS. The BFVS-A3 includes enhancements intended to improve lethality, mobility, survivability, and sustainability. Additionally, these enhancements provide increased situational awareness and digital command and control capabilities.

The mission of the BFVS is to provide mobile protected transport of an infantry squad to critical points on the battlefield and perform cavalry scout missions. The BFVS will also provide overwatching fires to support dismounted infantry and suppress or defeat enemy tanks and other fighting vehicles. BFVS-A3 enhancements include:

- Force XXI Battle Command, Brigade and Below (FBCB2) Integrated Combat Command and Control (IC3) to share digital battle command information and situational awareness with all components of the combined arms team.
- The improved Bradley acquisition system and commander's independent viewer, both 2<sup>nd</sup> generation Forward Looking Infrared (FLIRs), to enhance target acquisition and target engagement.
- A position navigation system with a Global Positioning System receiver and a backup inertial navigation system to enhance situational awareness.
- Integrated maintenance diagnostics and Built-In-Test/Built-In-Test Equipment.

### **BACKGROUND INFORMATION**

In March 1994, the Army began the EMD phase. Previous operational testing conducted prior to FY01 included a Limited User Test (LUT) I in December 1997, an Operational Experiment in September 1998, a Detection, Acquisition, Recognition, Identification (DARI) test in October 1998, and a LUT II in August-September 1999.

The evaluation of the M2A3 vulnerability was based on the full-up, system-level live fire test (FUSL LFT), early M2A3 ballistic shock testing, electronic fault insertion events (controlled damage tests), directed energy weapon (laser) testing, and other sub-system or component T&E, as well as

previous M2A2 Live Fire T&E. The culminating LFT&E event was the FUSL LFT, conducted during the period December 1998-September 1999.

### **TEST & EVALUATION ACTIVITY**

BFVS-A3 IOT&E was conducted in October-November 2000 IAW a DOT&E approved plan. DOT&E monitored test events and conducted an independent assessment of the test and provided an Operational and Live Fire Test and Evaluation Report to the Secretary of Defense and Congress in April 2001. Planning for possible post-Milestone III vulnerability testing is currently ongoing. Such testing could include exploring fixes to unexpected vulnerabilities revealed in the LFT&E, or shock vulnerabilities of FBCB2 components.

### **TEST & EVALUATION ASSESSMENT**

M2A3 is operationally effective, suitable, and survivable. This assessment is based on the results of IOT&E, LUT-2, and the DARI. Overall, the M2A3 showed an improved level of operational effectiveness in comparison to the M2A2 Operation Desert Storm (ODS), the most advanced currently fielded version of the Bradley Fighting Vehicle System. This improvement in operational effectiveness is attributable to the M2A3's superior capability compared to the M2A2 ODS to detect, identify, and hit targets and the M2A3's improved night fighting capability. However, FBCB2 digital command and control, as integrated into the M2A3, demonstrated during IOT&E that it was neither effective nor suitable and it did not contribute to the operational effectiveness of the M2A3/M1A2 SEP equipped force. Despite this fact, M2A3 was able to demonstrate an overall improved level of operational effectiveness in comparison to the M2A2 ODS, predominately because of the capabilities of the M2A3's 2<sup>nd</sup> Generation FLIR and improved fire control system.

An FOT&E should focus on the operational effectiveness and suitability of the system's FBCB2 digital command and control capabilities. FOT&E will be conducted in conjunction with the FBCB2 IOT&E or FBCB2 LUT-III. Further details can be found in the Combined Operational Test & Evaluation and Live Fire Test & Evaluation Report on the M2A3 Bradley Fighting Vehicle System (BFVS) dated April 6,